Chain of Custody Record

TestAmerica Denver
4955 Yarrow Street

Arvada, CO 80002
(303) 736-0100

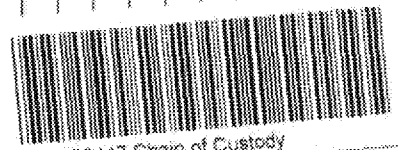
TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Robert Liddle	Site Contact: Christel Compton	Date:2-14-18	COC No: PAR-022016-1
Chemours	713-542-9503	Lab Contact:	Carrier:FedEx	1 of 2 COCs
22828 NC HWY 87 W	Analysis Turnaround Time			Sampler:
Fayetteville, NC 28306	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
910-678-1213	TAT if different from Below ASAP			Walk-in Client:
(xxx) xxx-xxxx FAX	☐ 2 weeks			Lab Sampling:
Project Name: Chemours Fayetteville OLD OUT FALL	☐ 1 week			
Site:Chemours Fayetteville Works Plant	☑ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	HFPO-DA	Sample Specific Notes:
FAY-VES-OLDOUTFALL-A-REP	2/14/2018	1200	G	W	2	N	N	X	
FAY-VES-OLDOUTFALL-A-D	2/14/2018	1200	G	W	2	N	N	X	
FAY-VES-OLDOUTFALL-A-MS	2/14/2018	1200	G	W	2	N	N	X	
FAY-VES-OLDOUTFALL-A	2/14/2018	1200	G	W	2	N	N	X	
FAY-VES-OLDOUTFALL-B	2/14/2018	1245	G	W	2	N	N	X	
FAY-VES-OLDOUTFALL-C	2/14/2018	1338	G	W	2	N	N	X	
FAY-VES-OLDOUTFALL-D	2/14/2018	1405	G	W	2	N	N	X	
FAY-VES-OLDOUTFALL-E	2/14/2018	1415	G	W	2	N	N	X	
FAY-VES-OLDOUTFALLSEEP-A	2/14/2018	1310	G	W	2	N	N	X	
FAY-VES-OLDOUTFALLCREEK-A	2/14/2018	1322	G	W	2	N	N	X	
FAY-VES-OLDOUTFALLCREEK-A2	2/14/2018	1530	G	W	2	N	N	X	
FAY-VES-OLDOUTFALLCREEK-A3	2/14/2018	1645	G	W	2	N	N	X	



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐Return to Client ☐Disposal by Lab ☐Archive for _____ Months

Special Instructions/QC Requirements & Comments:

2.6 2.7 5

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company: PARSONS	Date/Time: 02-14-18 -1900	Received by:	Company: TA-Den	Date/Time: 2-15-18 0930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

TestAmerica Denver
4955 Yarrow Street

Arvada, CO 80002
(303) 736-0100

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐Dw ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: Robert Liddle	Site Contact: Christel Compton	Date: 2-14-18	COC No: FAR-022018-2
Chemours	713-542-9503	Lab Contact:	Carrier: FedEx	2 of 2 COCs
22828 NC HWY 87 W	Analysis Turnaround Time			Sampler:
Fayetteville, NC 28306	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
910-678-1213	TAT if different from Below: ASAP			Walk-in Client:
(xxx) xxx-xxxx FAX	☐ 2 weeks			Lab Sampling:
Project Name: Chemours Fayetteville OLD OUT FALL	☐ 1 week			
Site: Chemours Fayetteville Works Plant	☑ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	HPPO-DA	Sample Specific Notes:
FAY-VES-OLDOUTFALLCREEKWATERBO	2/14/2018	1700	G	W	2	N	N	X	
FAY-VES-FB-021418	2/14/2018	700	G	W	2	N	N	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐Return to Client ☐Disposal by Lab ☐Archive for _____ Months

Special Instructions/QC Requirements & Comments:

2.6 2.7 5

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	PARSONS	02-14-18 1900		FAVEN	2-15-18 0930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.3, dated 12/05/2013

Login Sample Receipt Checklist

Client: Chemours Company FC, LLC The

Job Number: 280-106447-1

Login Number: 106447
List Number: 1
Creator: Pottruff, Reed W

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

To: Canavan, Sheila[Canavan.Sheila@epa.gov]
Cc: Krasnic, Toni[krasnic.toni@epa.gov]; Allison, Rose[Allison.Rose@epa.gov]; Schweer, Greg[Schweer.Greg@epa.gov]
From: Gonzalez, Yvonne V.
Sent: Tue 7/18/2017 8:18:25 PM
Subject: RE: Gen X Controls
AX-17-001-0265_Keenan+APTMD Email bba accepts ccd comments_yvg 7 18 17.docx

Attached with a couple items. Again defer to you. And it goes without saying, anything added should be included in the other correspondence that was attached.

Thanks
Regards,
Yvonne-Veronica Gonzalez
Chemical Control Division
Office of Pollution Prevention Toxics
(202)564-2912

From: Canavan, Sheila
Sent: Tuesday, July 18, 2017 3:22 PM
To: Gonzalez, Yvonne V. <Gonzalez.Yvonne@epa.gov>
Subject: FW: Gen X Controls

Meant to cc you. I asked Toni, Rose and Greg to take a look. Could you also take a look. Thx.

From: Canavan, Sheila
Sent: Tuesday, July 18, 2017 3:21 PM
To: Krasnic, Toni <krasnic.toni@epa.gov>; Allison, Rose <Allison.Rose@epa.gov>; Schweer, Greg <Schweer.Greg@epa.gov>
Subject: FW: Gen X Controls

See my suggested edits to the R4 proposed response and let me know if you have additional edits to the file that is named ccd comments. They are asking for them this afternoon, so as soon as you can. Thanks.

From: Strauss, Linda
Sent: Tuesday, July 18, 2017 11:57 AM
To: Pierce, Alison <Pierce.Alison@epa.gov>; Blair, Susanna <Blair.Susanna@epa.gov>
Cc: Doa, Maria <Doa.Maria@epa.gov>; Canavan, Sheila <Canavan.Sheila@epa.gov>; Schmit, Ryan <schmit.ryan@epa.gov>
Subject: FW: Gen X Controls

Alison, Ryan and I just spoke about this. Does OPPT have any edits to this? Thanks.

From: Strauss, Linda
Sent: Monday, July 17, 2017 9:47 PM
To: Allenbach, Becky <Allenbach.Becky@epa.gov>; Lincoln, Larry <Lincoln.Larry@epa.gov>; Wise, Allison <Wise.Allison@epa.gov>; Schmit, Ryan <schmit.ryan@epa.gov>; Wadlington, Christina <Wadlington.Christina@epa.gov>; Pierce, Alison <Pierce.Alison@epa.gov>; Drinkard, Andrea <Drinkard.Andrea@epa.gov>
Subject: Fwd: Gen X Controls

Yes, forwarding to others as well as Andrea Drinkard, coms director, OW.

Sent from my iPhone
Begin forwarded message:

> **From:** "Allenbach, Becky" <Allenbach.Becky@epa.gov>
> **Date:** July 17, 2017 at 5:53:50 PM EDT
> **To:** "Strauss, Linda" <Strauss.Linda@epa.gov>, "Lincoln, Larry" <Lincoln.Larry@epa.gov>
> **Cc:** "Wise, Allison" <Wise.Allison@epa.gov>, "Wadlington, Christina" <Wadlington.Christina@epa.gov>
> **Subject: Gen X Controls**

Linda/Larry:

Attached are 2 controls regarding Gen X. They are basically the same letter and have been edited by our TSCA folks in the Region, but we wanted to give HQ the opportunity to weigh in as well. Please let us know if you have changes. I should send this to OW as well. Who is the appropriate person?

Becky

Becky B. Allenbach, Acting Deputy Director
Water Protection Division
EPA Region 4 - Atlanta
Office: 404-562-9687
Cell: Personal Phone / Ex. 6

-----Original Message-----
From: Jones, Annette
Sent: Monday, July 17, 2017 5:06 PM
To: Allenbach, Becky <Allenbach.Becky@epa.gov>
Cc: Marcus, Pam <marcus.pam@epa.gov>
Subject: RE: Controls
Importance: High

M. Annette Jones
Staff Assistant
U.S. Environmental Protection Agency |Grants and Drinking Water Protection Branch|
61 Forsyth Street, s.w.|Atlanta, Georgia 30303 |Tel 404-562-9737| Fax 404-562-9439
jones.mannette@epa.gov

-----Original Message-----
From: Allenbach, Becky
Sent: Monday, July 17, 2017 4:04 PM
To: Jones, Annette <Jones.MAnnette@epa.gov>
Cc: Marcus, Pam <marcus.pam@epa.gov>
Subject: Controls

Would you send me the final version of the Gen X controls? Mary wants them to go to HQ

Becky B. Allenbach
Acting Deputy Director
Water Protection Division - Region 4
404-562-9687

To: Aubee, Catherine[Aubee.Catherine@epa.gov]; Sarraino, Stephanie[sarraino.stephanie@epa.gov]; EL-Zoobi, Majd[El-Zoobi.Majd@epa.gov]; Johnson, Maggie[Johnson.Maggie@epa.gov]
From: Libelo, Laurence
Sent: Thur 10/19/2017 5:27:40 PM
Subject: FW: Enforcement/Investigatory / Ex. 7(a)

FYI

From: Garvey, Mark
Sent: Thursday, October 19, 2017 11:51 AM
To: Miles, James <miles.james@epa.gov>
Cc: Libelo, Laurence <Libelo.Laurence@epa.gov>; Lindstrom, Andrew <Lindstrom.Andrew@epa.gov>; Strynar, Mark <Strynar.Mark@epa.gov>; Speir, Jeffrey <speir.jeffrey@epa.gov>
Subject: FW: Enforcement/Investigatory / Ex. 7(a)

Enforcement/Investigatory / Ex. 7(a)

Mark

Mark Garvey
EPA Headquarters
Office of Civil Enforcement
Attorney
202-564-4168
garvey.mark@epa.gov

From: Tucker, Marlene
Sent: Thursday, October 19, 2017 9:45 AM
To: Garvey, Mark <Garvey.Mark@epa.gov>
Subject: FW: data requested

Mark,

Enforcement/Investigatory/ Ex. 7(a)

Regards

Marlene Tucker

From: Bookman, Robert
Sent: Wednesday, October 18, 2017 11:55 AM
To: Tucker, Marlene <Tucker.Marlene@epa.gov>
Subject: FW: data requested

Marlene, FYI.

Robert

From: Allenbach, Becky

Sent: Wednesday, October 18, 2017 11:50 AM
To: Mitchell, Ken <Mitchell.Ken@epa.gov>
Cc: Doa, Maria <Doa.Maria@epa.gov>; George, Verne <George.Verne@epa.gov>; Bates, Keith <Bates.Keith@epa.gov>; Bookman, Robert <Bookman.Robert@epa.gov>; Kemker, Carol <Kemker.Carol@epa.gov>
Subject: Re: data requested

Maria, as explained by NC yesterday, Enforcement/Investigatory/ Ex. 7(a)
Enforcement/Investigatory/ Ex. 7(a)

Becky B. Allenbach, Chief
Grants and Drinking Water Protection Branch
Water Protection Division - Region 4
404-562-9687

On Oct 18, 2017, at 11:45 AM, Mitchell, Ken <Mitchell.Ken@epa.gov> wrote:

> Maria...please find attached air emission data requested by NC and provided by Chemours. Please let us know if you have any questions.

Kenneth L. Mitchell, Ph.D. | Special Assistant to the Director |
Air, Pesticides, and Toxics Management Division
U.S. Environmental Protection Agency | 61 Forsyth Street, SW | Atlanta, GA 30303
Voice: 404-562-9065 | Fax: 404-562-9066 | Email: mitchell.ken@epa.gov

From: Allenbach, Becky
Sent: Tuesday, October 17, 2017 7:30 PM
To: Kemker, Carol <Kemker.Carol@epa.gov>; Mitchell, Ken <Mitchell.Ken@epa.gov>
Subject: FW: data requested

Carol and Ken:

This was discussed on our weekly check in with NC. Enforcement/Investigatory/ Ex. 7(a) I was hoping you could share this with your HQ TSCA counterparts. I can fill in info if needed.

Becky

Becky B. Allenbach, Chief
Grants and Drinking Water Protection Branch
Water Protection Division
EPA Region 4 - Atlanta
Office: 404-562-9687
Cell: Personal Phone / Ex. 6

From: Culpepper, Linda [mailto:linda.culpepper@ncdenr.gov]
Sent: Tuesday, October 17, 2017 4:08 PM
To: Buckley, Timothy <Buckley.Timothy@epa.gov>; Strynar, Mark <Strynar.Mark@epa.gov>; Lindstrom, Andrew <Lindstrom.Andrew@epa.gov>; Allenbach, Becky <Allenbach.Becky@epa.gov>; Kemker, Carol

<Kemker.Carol@epa.gov>; Mitchell, Ken <Mitchell.Ken@epa.gov>; Banister, Beverly <Banister.Beverly@epa.gov>; Jones, Aaryn <Jones.Aaryn@epa.gov>; France, Danny <France.Danny@epa.gov>
Cc: Scott, Michael <michael.scott@ncdenr.gov>; Woosley, Julie <julie.woosley@ncdenr.gov>; Johnson, Chris <chris.johnson@ncdenr.gov>; Cox, Heidi <heidi.cox@ncdenr.gov>; Allen, Trent <trent.allen@ncdenr.gov>; Gregson, Jim <jim.gregson@ncdenr.gov>; michael.abraczinskas@ncdenr.gov
Subject: FW: data requested

Forwarding air emissions data.

Linda Culpepper
Deputy Director
Division of Water Resources
North Carolina Department of Environmental Quality

1611 Mail Service Center
Phone: 919-707-9014

From: Abraczinskas, Michael
Sent: Tuesday, October 17, 2017 3:55 PM
To: Culpepper, Linda <linda.culpepper@ncdenr.gov>
Subject: data requested

Linda,
Attached you'll find the emissions data requested by EPA today. Please pass along to the points of contact.
Thanks!
-Mike

Mike Abraczinskas, EIT, CPM
Director, Division of Air Quality
North Carolina Department of Environmental Quality

919 707 8447 office
michael.abraczinskas@ncdenr.gov

217 West Jones Street
1641 Mail Service Center
Raleigh, NC 27699

<image001.png>

<DEQ Emissions Information Dimer Acid.docx>

To: Garvey, Mark[Garvey.Mark@epa.gov]
Cc: George, Verne[George.Verne@epa.gov]
From: George, Verne
Sent: Tue 6/19/2018 4:17:56 PM
Subject: RE: Prep for Chemours Inspection Briefing with AA

Okay

From: Garvey, Mark
Sent: Tuesday, June 19, 2018 12:00 PM
To: George, Verne <George.Verne@epa.gov>
Subject: RE: Prep for Chemours Inspection Briefing with AA

Verne,

I need to join a conference call right now and James is not in his office. I'll catch up with you later today. I have several meetings this afternoon.

Mark

Mark Garvey
EPA Headquarters
Office of Civil Enforcement
Attorney
202-564-4168
garvey.mark@epa.gov

From: George, Verne
Sent: Tuesday, June 19, 2018 11:56 AM
To: Garvey, Mark <Garvey.Mark@epa.gov>
Subject: RE: Prep for Chemours Inspection Briefing with AA

If you still have a need for a meeting, we could have it at 12:00.

From: Garvey, Mark
Sent: Tuesday, June 19, 2018 11:50 AM
To: George, Verne <George.Verne@epa.gov>
Subject: RE: Prep for Chemours Inspection Briefing with AA

I wish I had seen this this earlier. I just got off the phone with Daryl.

Mark Garvey
EPA Headquarters
Office of Civil Enforcement
Attorney
202-564-4168
garvey.mark@epa.gov

From: George, Verne

Sent: Tuesday, June 19, 2018 9:09 AM
To: Garvey, Mark <Garvey.Mark@epa.gov>
Cc: George, Verne <George.Verne@epa.gov>
Subject: RE: Prep for Chemours Inspection Briefing with AA

Mark

If you are available at 11:00 a.m. today, can we have the conference call. When you send out the invite, can you include Daryl.

From: Garvey, Mark
Sent: Monday, June 18, 2018 5:46 PM
To: George, Verne <George.Verne@epa.gov>
Cc: Miles, James <miles.james@epa.gov>
Subject: RE: Prep for Chemours Inspection Briefing with AA

Enforcement/Investigatory / Ex. 7(a) / Attorney-Client / Deliberative Process / Ex. 5

Mark

Mark Garvey
EPA Headquarters
Office of Civil Enforcement
Attorney
202-564-4168
garvey.mark@epa.gov

From: George, Verne
Sent: Monday, June 18, 2018 3:35 PM
To: Garvey, Mark <Garvey.Mark@epa.gov>
Cc: George, Verne <George.Verne@epa.gov>
Subject: RE: Prep for Chemours Inspection Briefing with AA

Mark:

We were unable to get everyone together for the call today. Tomorrow morning, I will contact you with a proposed time for a 30 minutes meeting.

From: Garvey, Mark
Sent: Monday, June 18, 2018 10:26 AM
To: George, Verne <George.Verne@epa.gov>; Toney, Anthony <Toney.Anthony@epa.gov>; Bookman, Robert <Bookman.Robert@epa.gov>; Kemker, Carol <Kemker.Carol@epa.gov>
Cc: Miles, James <miles.james@epa.gov>; Ellis, Tony <Ellis.Tony@epa.gov>
Subject: Prep for Chemours Inspection Briefing with AA

Carol, Tony, Robert and Verne,

Enforcement/Investigatory / Ex. 7(a) / Attorney-Client / Deliberative Process / Ex. 5

Enforcement/Investigatory / Ex. 7(a) / Attorney-Client / Deliberative Process / Ex. 5

If you have 30 minutes to talk today, I think it would be helpful for me.

Thanks,
Mark

Mark Garvey
EPA Headquarters
Office of Civil Enforcement
Attorney
202-564-4168
garvey.mark@epa.gov

To: Miles, James[miles.james@epa.gov]
From: Miles, James
Sent: Tue 7/18/2017 5:11:26 PM
Subject: Planning Meeting Notes Re: Region 3 Inspection of Parkersburg, WVa Facility

Region 3 planning a Region 3 Chemours inspection in Parkersburg, WV.

- Introductions - All
- Background on R4 Facility & Inspection & Areas of Concern – R4/HQ
    - Verne gave inspection summary

Enforcement/Investigatory / Ex. 7(a)

Enforcement/Investigatory / Ex. 7(a)

Post-brief with Tony, Mark, Greg and Diana

Enforcement/Investigatory / Ex. 7(a)

James Miles, Acting Chief
Chemical Risk and Reporting Enforcement Branch
Waste and Chemical Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
William Jefferson Clinton Bldg., South, Rm. 4111A
1201 Constitution Ave., NW
Washington, DC 20004
202.564.5161
miles.james@epa.gov

Message

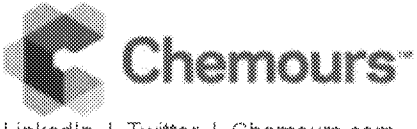
From: Garon, Kevin P [Kevin.Garon@chemours.com]
Sent: 3/30/2018 12:37:48 AM
To: Ghiold, Joe [joe.ghiold@ncdenr.gov]; Bud.mccarty@ncdenr.gov [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=9e0a0baf2a144db386a9c24001002458-Bud.mccarty@ncdenr.gov]; Scott, Michael [michael.scott@ncdenr.gov]; Woosley, Julie [julie.woosley@ncdenr.gov]; Mort, Sandra L [sandy.mort@ncdenr.gov]
CC: Allison, Rose [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=c3dc9e60e7674484b8d42fcc8d56510d-Rallison]; George, Verne [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8d8c394177af44b28b4ce452bccbc851-George, Verne]; Rumsey, Allison B. [Allison.Rumsey@apks.com]; Shoemaker, Stephen H [STEPHEN.H.SHOEMAKER@chemours.com]; Compton, Christel E [CHRISTEL.E.COMPTON@chemours.com]; Ovbey, Tracy (Tracy.Ovbey@parsons.com) [Tracy.Ovbey@parsons.com]
Subject: Chemours Fayetteville VE-South Investigation Report
Attachments: VE South Sampling FINAL.pdf

Dr. Ghiold,
Attached please find the Chemours Fayetteville VE-South Sampling and Analytical report. This report presents the sampling and analytical results collected from soil, near channel sediments/soils and wipe samples in the manufacturing area around VE-South. Due to the size of the laboratory data package, Attachment 2 (Laboratory Analytical Data) is not included in this attached document. Hard copies are being shipped to you by our consultant, Parsons, and will include an electronic disc or flash drive that contains the complete laboratory report.

Please call or e-mail with questions or comments.

Respectfully submitted,
Kevin

Kevin P. Garon
Principal Project Director
Chemours Corporate Remediation Group
704-560-6435
Kevin.Garon@Chemours.com
The Chemours Company



LinkedIn | Twitter | Chemours.com

https://www.chemours.com/Chemours_Home/en_US/email_disclaimer.html

PARSONS
4701 Hedgemore Drive ● Charlotte, North Carolina 28209● (704) 529-6246 ● Fax (704) 558-4097

TECHNICAL MEMORANDUM

Date: March 29, 2018

To: The Chemours Company FC, LLC

From: Tracy Ovbey

Subject: Nafion® VE-South Investigation
Fayetteville Works Facility
Fayetteville, North Carolina

INTRODUCTION

Parsons has prepared this *Nafion® VE-South Investigation Technical Memorandum* on behalf of the Chemours Fayetteville Works facility (Site) located in Fayetteville, North Carolina (Figure 1). Sampling was conducted in the Nafion® Vinyl Ethers (VE)-South area of the Site on February 2018 as part of on-going site investigation activities. This document presents the results of the investigation, which included the following sampling efforts:

- Collection of surface wipe samples from 23 locations
- Collection of 44 surface soil samples
- Collection of 20 ditch soil samples from the non-contact cooling water channel

Samples collected during this investigation were analyzed for the target compound hexafluoropropylene oxide dimer acid (HFPO-DA; CAS number 13252-13-6). The objective of this sampling investigation was to assess the presence of HFPO-DA in the area that may have resulted from an October 2017 HFPO-DA release. Additional information about each sampling effort is presented below.

SURFACE WIPE SAMPLING

Surface wipe samples were collected from 23 locations in the Nafion® VE-South area (as shown on Figure 2). The samples were collected from the open or available surface area of buildings, pipes, and other structures that were pre-selected by Chemours and Parsons personnel as having potential residue from the October 2017 release. The wipe sampling event began on February 6, 2018 and was completed on February 13th, 2018. Samples collected during this investigation were submitted to TestAmerica Laboratories for analysis of HFPO-DA.

SURFACE SOIL SAMPLING

Surface soil samples were collected at 44 locations throughout the Nafion® VE-South area (as shown on Figure 3). The surface soil sampling investigation event began on February 7, 2018 and was completed on February 21, 2018. Samples collected during this investigation were submitted to TestAmerica Laboratories for analysis of HFPO-DA.

DITCH SOIL SAMPLING

Shallow ditch soil samples were collected from 16 locations along the bank of the non-contact cooling water channel (Figure 4). The samples were collected on February 8 and 9, 2018 and were submitted to TestAmerica Laboratories for analysis of HFPO-DA

by the Synthetic Precipitation Leaching Procedure (SPLP). Two additional soil samples were collected at two of the primary locations and were analyzed for soil moisture only.

SAMPLING AND ANALYTICAL METHODOLGY

This section presents the methods and procedures that were used during the investigation.

Surface Wipe Sampling Procedure

The following procedure was followed during surface wipe sampling:

1. Each wipe sample location surface area was measured and marked out (samples were collected in open areas of various size).
2. A clean sampling pad was selected and placed in a container with Methanol/NH_4OH until saturated. Once saturated, it was removed with laboratory provided forceps.
3. The sampling gauze pad was wiped over the designated sample area with straight, even, slightly overlapping strokes. Using a second, clean pad, the wiping direction was changed and the pattern was repeated until the team member was confident that all the surface contaminant had been removed. All pads used to sample a single location were placed into one sample container as a composite sample. A minimum of three pads were collected from each sampling location.
4. The sample location was recorded and a chain of custody and fieldbook documentation were prepared for the collected samples.
5. Each wipe location was also photographed during the sampling effort.

A detailed procedure for wipe sample collection is included in Attachment 1. The procedure was prepared by TestAmerica Laboratories for Chemours.

Surface Soil Sampling Procedure

Prior to collection, the predetermined sample locations were identified and cleared for underground obstructions and utilities. The soil sample was then collected using an AMS soil core sampler equipped with a new stainless-steel liner. The liner was placed into the core barrel, which was then attached to the slide hammer. The core barrel was driven into the ground using the slide hammer until the top of the core barrel was level with ground surface. The core barrel was removed from the ground using the slide hammer, and the stainless-steel liner was removed from the core barrel. The ends of the liner were covered with Saran Wrap® and capped with plastic end caps. The sample liner was then labeled, placed in a Ziploc® bag, and then put into a sample cooler. Field staff noted the sample location in the field book with reference points (when possible) and collected the coordinates using ARC collector.

Ditch Soil Sampling Procedure

The shallow ditch soil samples were collected in fine-grained sediments (not gravel) immediately next to the ditch. The samples were collected above the ditch liner and within three feet of the ditch water.

At each sample location, the surface gravel was cleared off of the sampling location. A hand auger was then used to dig down not deeper than two feet, to either the top of the liner or, if no liner was present, to the top of the first clay layer. The soil sample was

collected from the six inches above the first low permeability layer (e.g, the clay or the liner). The lithology was recorded and photographed. Care was taken to ensure soil spoils did not enter the ditch or ditch water.

At two locations along the ditch, samples were collected from:

- three feet from the water edge (analyzed for moisture content only)
- two feet from the water edge (analyzed for moisture content only)
- one foot from the water edge (analyzed for HFPO-DA and moisture content)

The moisture content analysis samples were collected from the soil that was two to four inches above the liner/clay. The HFPO-DA analysis samples were collected from the soil that was six inches above the liner/clay.

Preservation and Handling of Samples

Immediately upon collection, each sample was placed into an insulated sample cooler for shipment to the laboratory. Wipe samples were shipped without wet ice preservation. Surface soil samples and ditch soil samples were preserved with wet ice, which was placed in the sample cooler within heavy-duty plastic bags. Samples were maintained at a cool temperature (optimum 4°C ± 2°C) from the time of collection until the coolers arrived at the laboratory (if required).

Prior to shipment of the samples to the laboratory, a chain-of-custody form was completed by the field sample custodian. Sample locations, sample identification numbers, description of samples, number of samples collected, and specific laboratory analyses to be run on each sample were recorded on the chain-of-custody form.

Quality Control Checks

Associated quality control samples collected and analyzed for the project included equipment blanks, field duplicates, and matrix spikes and lab replicates collected at a frequency of one per 20 samples, and field blanks, duplicate samples were collected daily or once per 20 samples.

Laboratory Analysis

Wipe samples were submitted to TestAmerica Laboratory in Knoxville, TN for extraction before being submitted to TestAmerica-Denver, Arvada, Colorado for analysis of HFPO-DA using method DV-LC-0012, Revision 14. Surface soil and ditch soil samples were submitted directly to TestAmerica-Denver, Arvada, Colorado for analysis of HFPO-DA using method DV-LC-0012, Revision 14. The laboratory reported the HFPO-DA results to a reporting limit (RL) which was based on the low concentration or concentration equivalent calibration standard. Reported concentrations were not corrected for contaminants detected in associated method and field blanks. Deliverables included a narrative and appropriate laboratory raw data and QC summary forms.

RESULTS

The results of the Nafion® VE-South investigation sampling efforts are summarized below.

Wipe Sample Results

Wipe samples were collected from 23 locations within the Nafion®-VE South area. Detections of HFPO-DA are shown in micrograms per square inch (µg/In^2) and ranged from 4.24E-04 µg/In^2 to 6.93E-01 µg/In^2. Results are listed in Table 1.

Surface Soil Sample Results

Surface soil samples were collected from a total of 44 locations. Results ranged from less than 1.3 ug/kg to 32,000 ug/kg. The highest results were found in vicinity of where the non-contact cooling water channel makes a westward turn. Results are listed in Table 2.

Ditch Soil Sample Results

Ditch soil samples were collected from a total of 20 locations including the two locations where additional samples for soil moisture were collected. The soil sample was leached by the SPLP method prior to analysis. HFPO-DA results ranged from 0.12 ug/L to 18 ug/L. The highest results were found in the area where the ditch turns westward and crosses under the road. Results are listed in Table 3.

FIGURES

Figure 1	Site Location Map
Figure 2	Wipe Sample Location Map
Figure 3	Surface Soil Sample Location Map
Figure 4	Ditch Soil Location Map

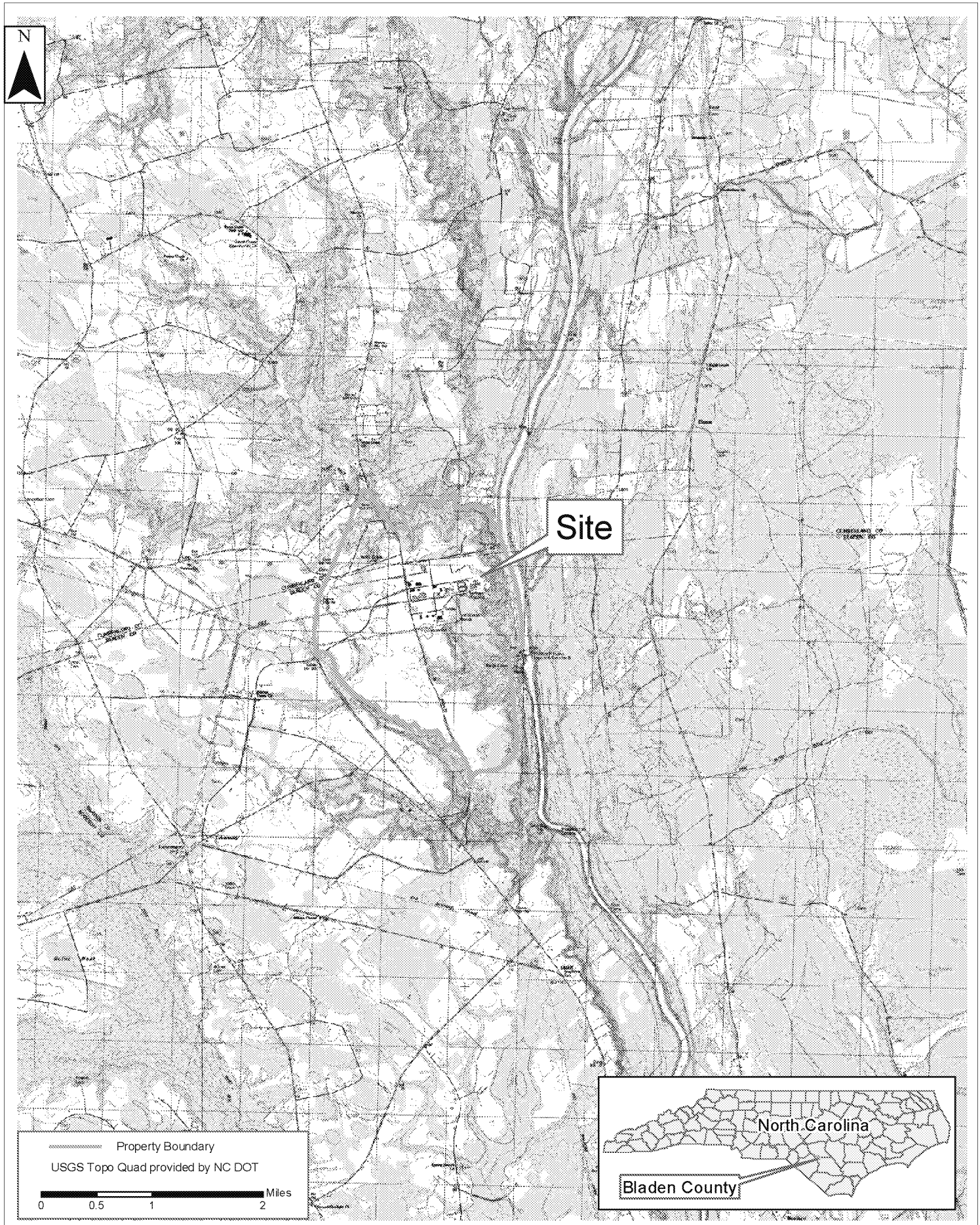
TABLES

Table 1	Wipe Sampling Results
Table 2	Surface Soil Sampling Results
Table 3	Ditch Soil Sampling Results

ATTACHMENTS

Attachment 1	Procedure for Wipe Sample Collection
Attachment 2	Laboratory Analytical Data

FIGURES



PARSONS

PE&I
4701 Hedgemore Dr.
Charlotte, NC 28209

Site Location Map
Nafion® VE-South Investigation
Chemours Fayetteville Works
Fayetteville, North Carolina

Drawn:	Date:	File Project Number:
C. Oneal	1/29/2018	450768
Revision: 1	Figure Number: 1	
Name: Fay_Fig_1_Site_Loc		

D:\GIS\Fayetville\GisProject_figures\2017\SiteInvestigation\Fay_Fig_1_Site_Loc.mxd

PARSONS

PE&I
4701 Hedgemore Dr.
Charlotte, NC 28209

Wipe Sample Location Map
Nafion® VE-South Investigation
Chemours Fayetteville Works
Fayetteville, North Carolina

Drawn:	Date:	File Project Number:
C. Oneal	3/28/2018	449338.01050
Revision: 1	Figure 2	
Name: VES_2		

PARSONS

PE&I
4701 Hedgemore Dr.
Charlotte, NC 28209

Surface Soil Sample Location Map
Nafion® VE-South Investigation
Chemours Fayetteville Works
Fayetteville, North Carolina

Drawn:	Date:	File Project Number:
C. Oneal	3/28/2018	449338.01050
Revision: 1	Figure Number: 3	
Name: VES_3b		

D:\GIS\Chevron\MXD\2016\VES_3b.mxd

PARSONS

PE&I
4701 Hedgemore Dr.
Charlotte, NC 28209

Ditch Soil Sample Location Map
Nafion® VE-South Investigation
Chemours Fayetteville Works
Fayetteville, North Carolina

Drawn:	Date:	File Project Number:
C. Oneal	3/28/2018	449338.01050
Revision: 1	Figure 4	
Name: VES_1		

TABLES

Table 1

Wipe Sampling Results

Nafion® VE-South Investigation

Chemours Fayetteville Works

Fayetteville, North Carolina

Sample ID	Location ID	Sample Date	HFPO-DA Result ($\mu g/In^2$)
FAY-WIPE-VES-01	01	02/06/2018	3.21E-02
FAY-WIPE-VES-02	02	02/06/2018	1.24E-01
FAY-WIPE-VES-03	03	02/06/2018	5.83E-02
FAY-WIPE-VES-04	04	02/06/2018	3.33E-03
FAY-WIPE-VES-05	05	02/06/2018	3.26E-02
FAY-WIPE-VES-06	06	02/06/2018	1.51E-02
FAY-WIPE-VES-07	07	02/06/2018	1.64E-02
FAY-WIPE-VES-08	08	02/06/2018	4.90E-03
FAY-WIPE-VES-09	09	02/06/2018	4.24E-04
FAY-WIPE-VES-10	10	02/06/2018	7.00E-04
FAY-WIPE-VES-10-D	10-D	02/06/2018	7.97E-04
FAY-WIPE-VES-11	11	02/06/2018	6.38E-03
FAY-WIPE-VES-12	12	02/06/2018	1.61E-03
FAY-WIPE-VES-13	13	02/06/2018	1.57E-02
FAY-WIPE-VES-14	14	02/06/2018	2.08E-03
FAY-WIPE-VES-15	15	02/06/2018	7.44E-03
FAY-WIPE-VES-16	16	02/06/2018	3.80E-01
FAY-WIPE-VES-17	17	02/06/2018	4.44E-03
FAY-WIPE-VES-18	18	02/06/2018	6.93E-01
FAY-WIPE-VES-19	19	02/07/2018	1.96E-01
FAY-WIPE-VES-19-D	19-D	02/07/2018	4.71E-02
FAY-WIPE-VES-20	20	02/07/2018	1.51E-02
FAY-WIPE-VES-21	21	02/07/2018	7.71E-03
FAY-WIPE-VES-22	22	02/07/2018	1.00E-01
FAY-WIPE-VES-23	23	02/07/2018	5.86E-02
FAY-WIPE-VES-A-PRE	A-PRE	02/07/2018	4.03E-02
FAY-WIPE-VES-A-POST	A-POST	02/13/2018	4.16E-03
FAY-WIPE-VES-B-PRE	B-PRE	02/07/2018	4.72E-02
FAY-WIPE-VES-B-POST	B-POST	02/13/2018	2.51E-02

Note:

HFPO-DA = hexafluoropropylene oxide dimer acid

$\mu g/In^2$ = micrograms per square inch

D = duplicate sample

Table 2

Surface Soil Sampling Results
Surface Soil Sampling Investigation
Chemours Fayetteville Works
Fayetteville, North Carolina

Sample ID	Location ID	Sample Date	HFPO-DA Result (ug/kg)
FAY-SOIL-VES-01	01	2/7/2018	24
FAY-SOIL-VES-02	02	2/7/2018	3.2
FAY-SOIL-VES-02-D	02-D	2/7/2018	3.6
FAY-SOIL-VES-03	03	2/9/2018	4.2
FAY-SOIL-VES-04	04	2/9/2018	14
FAY-SOIL-VES-05	05	2/9/2018	18
FAY-SOIL-VES-06	06	2/9/2018	24
FAY-SOIL-VES-07	07	2/9/2018	42
FAY-SOIL-VES-08	08	2/9/2018	2.9
FAY-SOIL-VES-09	09	2/9/2018	6.9
FAY-SOIL-VES-10	10	2/9/2018	110
FAY-SOIL-VES-11	11	2/9/2018	260
FAY-SOIL-VES-12	12	2/9/2018	32
FAY-SOIL-VES-13	13	2/9/2018	140
FAY-SOIL-VES-14	14	2/9/2018	130
FAY-SOIL-VES-15	15	2/9/2018	430
FAY-SOIL-VES-16	16	2/9/2018	140
FAY-SOIL-VES-17	17	2/9/2018	340
FAY-SOIL-VES-18	18	2/9/2018	220
FAY-SOIL-VES-19	19	2/9/2018	240
FAY-SOIL-VES-20	20	2/12/2018	1.8
FAY-SOIL-VES-20-D	20-D	2/12/2018	1.8
FAY-SOIL-VES-21	21	2/12/2018	<1.3
FAY-SOIL-VES-22	22	2/12/2018	2.7
FAY-SOIL-VES-23	23	2/12/2018	43
FAY-SOIL-VES-24	24	2/12/2018	14
FAY-SOIL-VES-25	25	2/13/2018	15
FAY-SOIL-VES-26	26	2/13/2018	18
FAY-SOIL-VES-27	27	2/13/2018	44
FAY-SOIL-VES-28	28	2/13/2018	140
FAY-SOIL-VES-29	29	2/13/2018	10
FAY-SOIL-VES-30	30	2/13/2018	6.2
FAY-SOIL-VES-31	31	2/13/2018	7.4
FAY-SOIL-VES-32	32	2/13/2018	2.2

Table 2

Surface Soil Sampling Results
Surface Soil Sampling Investigation
Chemours Fayetteville Works
Fayetteville, North Carolina

Sample ID	Location ID	Sample Date	HFPO-DA Result (ug/kg)
FAY-SOIL-VES-33	33	2/13/2018	32000
FAY-SOIL-VES-34	34	2/13/2018	540
FAY-SOIL-VES-35	35	2/13/2018	8.6
FAY-SOIL-VES-36	36	2/13/2018	1400
FAY-SOIL-VES-37	37	2/13/2018	14
FAY-SOIL-VES-38	38	2/13/2018	19
FAY-SOIL-VES-39	39	2/13/2018	130
FAY-SOIL-VES-40	40	2/21/2018	9.1
FAY-SOIL-VES-41	41	2/21/2018	29
FAY-SOIL-VES-41D	41D	2/21/2018	110
FAY-SOIL-VES-42	42	2/21/2018	130
FAY-SOIL-VES-43	43	2/21/2018	350
FAY-SOIL-VES-44	44	2/21/2018	18

Note:
HFPO-DA = hexafluoropropylene oxide dimer acid
ug/kg = micrograms per kilogram
D = duplicate sample

Table 3

Ditch Soil Sampling Results

Nafion® VE-South Investigation

Chemours Fayetteville Works

Fayetteville, North Carolina

Sample ID	Location ID	Sample Date	Sample Depth Interval (inches)	HFPO-DA Result (ug/L)	Moisture Result (%)
FAY-DCH-VES-A	A	2/8/2018	18-24	0.14	NM
FAY-DCH-VES-B	B	2/8/2018	14-20	0.12	NM
FAY-DCH-VES-B-D	B-D	2/8/2018	14-20	0.15	NM
FAY-DCH-VES-C-1	C-1	2/8/2018	0-1	NM	11.7
FAY-DCH-VES-C-2	C-2	2/8/2018	0-7	0.087	14.5
FAY-DCH-VES-C-3	C-3	2/8/2018	17-23	NM	19.4
FAY-DCH-VES-D	D	2/8/2018	13-19	0.42	NM
FAY-DCH-VES-E	E	2/9/2018	0-9	0.18	NM
FAY-DCH-VES-F	F	2/8/2018	0-5	0.067	NM
FAY-DCH-VES-G-1	G-1	2/9/2018	0-6	NM	10.7
FAY-DCH-VES-G-2	G-2	2/9/2018	0-6	NM	10.2
FAY-DCH-VES-G-3	G-3	2/9/2018	0-7	0.14	22.2
FAY-DCH-VES-H	H	2/13/2018	0-6	0.3	NM
FAY-DCH-VES-I	I	2/13/2018	0-6	0.69	NM
FAY-DCH-VES-J	J	2/13/2018	7-13	1.5	NM
FAY-DCH-VES-K	K	2/13/2018	0-6	18	NM
FAY-DCH-VES-L	L	2/13/2018	18-24	0.48	NM
FAY-DCH-VES-M	M	2/8/2018	18-24	0.33	NM
FAY-DCH-VES-N	N	2/13/2018	0-7	0.36	NM
FAY-DCH-VES-O	O	2/9/2018	18-24	0.65	NM
FAY-DCH-VES-P	P	2/8/2018	17-22	0.15	NM

Note:

HFPO-DA = hexafluoropropylene oxide dimer acid

ug/L = micrograms per liter

NM = Not Measured

B-D = Duplicate Sample

ATTACHMENT 1

PARSONS

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Procedure for Wipe Sample Collections
Prepared by TestAmerica Laboratories, Inc. in Knoxville, TN on January 31, 2018
For Chemours

This Wipe Sampling Procedure was prepared by TestAmerica Laboratories, Inc. for use by TestAmerica customers. It is being provided to enhance the quality of wipe samples collected and sent to TestAmerica in Knoxville, Tennessee for analysis.

1.0 Purpose/Applications

1.1 Wipe samples are taken to assess the presence of contaminants on various types of hard surfaces. The major objectives for wipe or surface samples are:

- To establish whether or not a contaminant is present.
- To determine the level and extent of contamination.
- To establish a database to be used for assessment of potential health risks.
- To measure decontamination efficiencies and/or effectiveness.

1.2 This procedure is applicable to the collection of wipe samples to determine contamination levels on hard surfaces such as floors, walls, and equipment. Wipes are an effective means for collecting a specimen of ambient constituents deposited or settled out on surfaces as a result of some contaminant-releasing incident. **Surface areas of personnel contact or those areas associated with air handling systems are highly desirable locations to sample.** A thorough understanding of all factors contributing to the condition of contamination, possible sources and the intended use of the data must be taken into account in making appropriate decisions concerning sample location.

2.0 Associated SOPs

2.1 "Sample Collection and Documentation", Standard Operating Procedure (SOP) No. ACS-SC-0001.

3.0 References

3.1 U.S. Department of Labor, May 24, 1984, "Sampling for Surface Contamination", Industrial Hygiene Technical Manual No. 680.

4.0 Equipment and Supplies

4.1 Methanol (HPLC Grade) containing 5% NH_4OH or other appropriate solvent for the specific contaminant being sampled

4.2 4- X 4-inch 100 percent cotton sterile gauze pads individually wrapped

4.3 250 mL wide-mouth HDPE bottle with solvent seal lid for solvent/pad reservoir

4.4 Forceps, HDPE

4.5 Appropriately sized sample bottles and screw caps with solvent seal lids

4.6 Custody tape - wide/narrow

4.7 Disposable gloves (appropriate to particular situation)

4.8 Unique preprinted sample number label tape

4.9 Ziploc® bag - quart and gallon sizes

4.10 Aluminum foil (optional for Chemours)

4.11 Stainless steel template or area marking device (optional for Chemours)

4.12 Tape measure

4.13 Field logbook

4.14 Chain-of-Custody forms

4.15 Request for Analysis forms

4.16 Sample Collection Log forms

4.17 Shipping containers

4.18 Safety glasses, ear protection, etc.

5.0 Procedure

5.1 Sample Location

Sample location can be selected before arrival on site based on previous site visits, maps, etc., or immediately before collection based on observations. The following are specific goals for use of wipe sample data, which can dictate the approach used in selecting sample locations.

5.1.1 Worst-case contamination sample - determination of area of highest contamination probability.

5.1.2 Extent of contamination sample - determination of how large an area over which the contamination has been dispersed.

5.1.3 Post-decontamination sample - determination of any residual contamination in an area after cleanup and decontamination work has been conducted.

5.1.4 Toxicological assessment - determining if an area is safe from a public health and exposure standpoint.

5.2 Wipe Area

Past experience has shown that a 2,500-square-centimeter (0.25 square meters) area is appropriate for most wipe sample applications. For specific projects, the following guidelines must be addressed.

5.2.1 The actual area to be wiped is largely determined by available analytical method sensitivity for target parameters and the target concentration(s) that define allowable exposure levels.

5.2.2 Required risk assessment data may further impact the size of wipe sample areas.

5.2.3 If a single surface area does not provide sufficient area for sample representation, smaller areas from the same general location may be sampled and composited to form one sample for analysis.

5.3 Solvent Selection

5.3.1 When sampling for particulates, the wipe efficiency is improved by saturating the pad with solvent. While solubility is not the concern in this case, the presence of moisture on the wipe encourages the particulates to cling to the gauze.

5.3.2 When the surface is in a phase other that particulate (e.g., mist, oil layer, etc.), an appropriate solvent must be used to remove the contamination. Routinely sampled contaminant/solvent combinations are listed below:

Contaminant	Solvent
HFPO-DA	Methanol/NH_4OH
Polychlorinated Biphenyls (PCBs)	Hexane, Acetone, Methylene Chloride
Dioxins & Furans (PCDDs/PCDFs)	Hexane
Herbicides	Hexane
Chlorinated Pesticides	Hexane, Methylene Chloride
Semivolatiles (BNAs)	Hexane, Methylene Chloride
Metals & Mercury	0.1N Nitric Acid Solution
Chloride, Bromide, Fluoride, Sulfate	0.5N Sodium Hydroxide Solution
Cyanide	0.5N Sodium Hydroxide Solution
Volatiles (VOCs)	Methanol

5.4 Taking the Wipe Sample

5.4.1 Prepare wipe collection pads by placing 4- by 4-inch, 100 percent cotton sterile gauze pads into the wide-mouth reservoir jar using gloved hands. Saturate the pads with the appropriate solvent for extraction of contaminant of interest (see Section 5.3.2 above).

NOTE: Never place gauze pads or forceps into the solvent source. Always deliver solvent from the source container onto the gauze without contact with the supply. Irreversible contamination can result from dipping or contact with the source. By pouring the solvent on the gauze pad inside the wide mouth sample jar in which it will be placed, contact may be avoided.

5.4.2 Begin the sampling procedure by collecting a field blank by wiping a pair of disposable gloves with a prepared gauze pad. The field blank will determine if specific analytical interferences may be present in either the sorbent pads, solvent, or the gloves. This procedure is repeated at a frequency of 5 percent of samples collected (1 per 20 samples), or at least once for each day that samples are collected.

5.4.3 Specifically locate and measure the area to be sampled and mark it with pencil or a noninterfering tape (e.g., masking tape) or utilize a premeasured, decontaminated template.

5.4.4 Don a new pair of gloves and wipe the sampling gauze pad over the designated sample area. With straight, even strokes, draw the pad across the area, slightly overlapping each stroke. Change the wiping direction **with a clean pad and repeat the pattern until confident that all of the surface contaminant has been removed.** Place all pads used to sample a single location into a common sample jar as a composite sample. A minimum of three (3) pads is recommended.

5.4.5 As each wipe pad is used, place it in the appropriate **prelabeled** sample container. When all pads for a sample have been completed, apply Teflon® tape around the closure area of the container.

5.4.6 Prepare sample documentation per "Sample Collection and Documentation", Standard Operating Procedure (SOP) No. ACS-SC-0001. Label the sample area and the location proximity, with reference points when possible.

5.4.7 The person in charge of field data should ensure that the following information is accurately recorded:

- Sample number on bottle and data sheet
- Sample location (include floor number, if appropriate)
- Sample description (e.g., wet wipe of vinyl-covered wallboard
- Sample date and time
- Area sampled in square centimeters (cm^2)
- Observations/problems, if pertinent
- Names of sampling personnel.

5.4.8 Upon removal of samples from site, a chain-of-custody form shall be established for the samples. The chain-of-custody will act as a transmittal form from sampling personnel to laboratory personnel and will be signed at this time to document that samples are properly relinquished and received by appropriate staff members.

6.0 Quality Assurance/Quality Control

6.1 A wipe field blank is collected at a frequency of 5 percent of samples collected (1 per 20 collected) or at lease daily to verify lack of interferences or cross contamination during sample collection and handling. Collection procedure is described in Section 5.4.2.

6.2 Re-wipe samples may be collected to evaluate the contaminant removal efficiency from the sampled surface. Re-wipes are collected as follows:

- The exact area which has just been triple wiped is wiped again using the sample technique as for the original sample.
- The re-wipe pads are placed in a separate sample collection jar and analyzed as a distinct sample.
- The original and re-wipe results are used to determine the relative effectiveness of the original wipe in removing the contaminant from the surface.
- Rewipes should be collected for every ten (10) samples, or 10% of the collections.

6.3 Duplicate - An area immediately adjacent to a previously sampled area is sampled using analogous techniques. Note that this is not a "true" duplicate, in the sense that it is not possible to actually split a wipe sample. There is no guarantee, therefore, that wipe duplicates will or should provide comparable results. The data may be used as a general indication of the homogeneity of the contamination across the particular surface.

6.4 Spikes - May be prepared in the field or laboratory. A standard solution of known concentration levels is injected onto prepared gauze pads and sent for analysis as a typical sample. Recovery efficiency, after the handling and analysis procedures, can then be assessed.

ATTACHMENT 2
LABORATORY ANALYTICAL DATA
(SEE ENCLOSED CD)

PARSONS

To: kristin.ryan@alaska.gov[kristin.ryan@alaska.gov]; john.halverson@alaska.gov[john.halverson@alaska.gov]; bmf@adem.alabama.gov[bmf@adem.alabama.gov]; GLD@adem.alabama.gov[GLD@adem.alabama.gov]; efp@adem.alabama.gov[efp@adem.alabama.gov]; DDH@adem.alabama.gov[DDH@adem.alabama.gov]; Benovic.Sara@azdeq.gov[Benovic.Sara@azdeq.gov]; kristy.richardson@state.co.us[kristy.richardson@state.co.us]; Nicole Lugli[Nicole.Lugli@ct.gov]; Patrick.Bowe@ct.gov[Patrick.Bowe@ct.gov]; Shannon Pociu[shannon.pociu@ct.gov]; robert.kaliszewski@ct.gov[robert.kaliszewski@ct.gov]; betsey.wingfield@ct.gov[betsey.wingfield@ct.gov]; Joseph.Ullo@dep.state.fl.us[Joseph.Ullo@dep.state.fl.us]; Justin B. Green[justin.b.green@dep.state.fl.us]; Lewis.Hays@dnr.ga.gov[Lewis.Hays@dnr.ga.gov]; James.Capp@dnr.ga.gov[James.Capp@dnr.ga.gov]; keith.carnley@dnr.ga.gov[keith.carnley@dnr.ga.gov]; Elizabeth.Booth@dnr.ga.gov[Elizabeth.Booth@dnr.ga.gov]; Peter.Nwogu@dnr.ga.gov[Peter.Nwogu@dnr.ga.gov]; Cobb, Rick[rick.cobb@illinois.gov]; Connie.Sullinger@illinois.gov[Connie.Sullinger@illinois.gov]; dave.mcmillan@illinois.gov[Dave.McMillan@illinois.gov]; Hollingsworth, Mary[MHolling@idem.IN.gov]; Sara Pierson[spierson@idem.in.gov]; Matt Prater[mprater@idem.in.gov]; kerri.malinowski@maine.gov[kerri.malinowski@maine.gov]; douglas.fine@state.ma.us[douglas.fine@state.ma.us]; c.mark.smith@state.ma.us[c.mark.smith@state.ma.us]; delaneyr@michigan.gov[delaneyr@michigan.gov]; krukowskim@michigan.gov[krukowskim@michigan.gov]; remusm@michigan.gov[remusm@michigan.gov]; LACHANCEA1@michigan.gov[LACHANCEA1@michigan.gov]; RuchS@michigan.gov[RuchS@michigan.gov]; OswaldE1@michigan.gov[OswaldE1@michigan.gov]; klemansd@michigan.gov[klemansd@michigan.gov]; benzier@michigan.gov[benzier@michigan.gov]; BushC6@michigan.gov[BushC6@michigan.gov]; Teresa Seidel[SEIDELT@michigan.gov]; LeemingS@Michigan.gov[LeemingS@Michigan.gov]; argiroffp@michigan.gov[argiroffp@michigan.gov]; alexanderc2@michigan.gov[alexanderc2@michigan.gov]; DebruynD@michigan.gov[DebruynD@michigan.gov]; randy.ellingboe@state.mn.us[randy.ellingboe@state.mn.us]; helen.goeden@state.mn.us[helen.goeden@state.mn.us]; James.kelly@state.mn.us[James.kelly@state.mn.us]; cyndi.karoly@ncdenr.gov[cyndi.karoly@ncdenr.gov]; mina.shehee@dhhs.nc.gov[mina.shehee@dhhs.nc.gov]; Jessica Godreau[Jessica.godreau@ncdenr.gov]; jay.zimmerman@ncdenr.gov[jay.zimmerman@ncdenr.gov]; sheila.holman@ncdenr.gov[sheila.holman@ncdenr.gov]; linda.culpepper@ncdenr.gov[linda.culpepper@ncdenr.gov]; clark.freise@des.nh.gov[clark.freise@des.nh.gov]; Brandon.kernen@des.nh.gov[Brandon.kernen@des.nh.gov]; catherine.beahm@des.nh.gov[catherine.beahm@des.nh.gov]; Steve.Maybury@dep.nj.gov[Steve.Maybury@dep.nj.gov]; Gloria.Post@dep.nj.gov[Gloria.Post@dep.nj.gov]; eileen.murphy@dec.ny.gov[eileen.murphy@dec.ny.gov]; Fagel, Jason R (DEC)[jason.fagel@dec.ny.gov]; Michael.ryan@dec.ny.gov[Michael.ryan@dec.ny.gov]; william.ottaway@dec.ny.gov[william.ottaway@dec.ny.gov]; elizabeth.lewis-michl@health.ny.gov[elizabeth.lewis-michl@health.ny.gov]; Personal Email / Ex. 6 gregg.recer@health.ny.gov[gregg.recer@health.ny.gov]; james.leach@health.ny.gov[james.leach@health.ny.gov]; justin.deming@health.ny.gov[justin.deming@health.ny.gov]; patrick.parsons@health.ny.gov[patrick.parsons@health.ny.gov]; david.spink@health.ny.gov[david.spink@health.ny.gov]; qian.wu@health.ny.gov[qian.wu@health.ny.gov]; kevin.malone@health.ny.gov[kevin.malone@health.ny.gov]; thomas.johnson@health.ny.gov[thomas.johnson@health.ny.gov]; craig.butler@epa.ohio.gov[craig.butler@epa.ohio.gov]; nik.dzamov@epa.ohio.gov[nik.dzamov@epa.ohio.gov]; susan.kessler@epa.ohio.gov[susan.kessler@epa.ohio.gov]; Bonnie.Buthker@epa.ohio.gov[Bonnie.Buthker@epa.ohio.gov]; jenyfer.allen@epa.ohio.gov[jenyfer.allen@epa.ohio.gov]; MASTERSON.Kevin@deq.state.or.us[MASTERSON.Kevin@deq.state.or.us]; marz.nicole@deq.state.or.us[marz.nicole@deq.state.or.us]; steven.jetter@state.or.us[steven.jetter@state.or.us]; snydersl@dhec.sc.gov[snydersl@dhec.sc.gov]; KINARDDB@dhec.sc.gov[KINARDDB@dhec.sc.gov]; Heidi.Hales@vermont.gov[Heidi.Hales@vermont.gov]; Chuck Schwer[Chuck.Schwer@vermont.gov]; siwe461@ECY.WA.GOV[siwe461@ECY.WA.GOV]; jbir461@ECY.WA.GOV[jbir461@ECY.WA.GOV]; katr461@ECY.WA.GOV[katr461@ECY.WA.GOV]; kzar461@ecy.wa.gov[kzar461@ecy.wa.gov]; Adam.DeWeese@wisconsin.gov[Adam.DeWeese@wisconsin.gov]; Steve.Elmore@Wisconsin.gov[Steve.Elmore@Wisconsin.gov]; cathrine.wunderlich@wisconsin.gov[cathrine.wunderlich@wisconsin.gov]; janice.willey@navy.mil[janice.willey@navy.mil]; aroberson@asdwa.org[aroberson@asdwa.org]; chanson@ecos.org[chanson@ecos.org]; slongsworth@ecos.org[slongsworth@ecos.org]; fbothfeld@acwa-us.org[fbothfeld@acwa-us.org]; David Paylor (david.paylor@deq.virginia.gov)[david.paylor@deq.virginia.gov]; martha.rudolph@state.co.us[martha.rudolph@state.co.us]; paul.mercer@maine.gov[paul.mercer@maine.gov]; virginia.yingling@state.mn.us[virginia.yingling@state.mn.us]; Gregory.Carr@deq.ok.gov[Gregory.Carr@deq.ok.gov]; slongsworth@ecos.org[slongsworth@ecos.org]; Mick Kuhns[Mick.Kuhns@maine.gov]; Brian.Walsh@state.sd.us[Brian.Walsh@state.sd.us]; Chris.Armstrong@deq.ok.gov[Chris.Armstrong@deq.ok.gov]; ray.roberts@deq.ok.gov[ray.roberts@deq.ok.gov]; kelly.dixon@deq.ok.gov[kelly.dixon@deq.ok.gov]; Alice.Edwards@alaska.gov[Alice.Edwards@alaska.gov]

Cc: Orme-Zavaleta, Jennifer[Orme-Zavaleta.Jennifer@epa.gov]; Morris, Jeff[Morris.Jeff@epa.gov]; Cherepy, Andrea[Cherepy.Andrea@epa.gov]; Burden, Susan[Burden.Susan@epa.gov]; Mattas-Curry, Lahne[Mattas-Curry.Lahne@epa.gov]; Hubbard, Carolyn[Hubbard.Carolyn@epa.gov]; Menghrajani, jacquelyn[Menghrajani.Jacquelyn@epa.gov]; Zambrana, Jose[Zambrana.Jose@epa.gov]; Gaines, Linda[Gaines.Linda@epa.gov]; Evangelista, Pat[Evangelista.Pat@epa.gov]; Impellitteri, Christopher[Impellitteri.Christopher@epa.gov]; Caporale, Cynthia[Caporale.Cynthia@epa.gov]; Fitz-James, Schatzi[Fitz-James.Schatzi@epa.gov]; Raffaele, Kathleen[raffaele.kathleen@epa.gov]; Flowers, Lynn[Flowers.Lynn@epa.gov]; Sinks, Tom[Sinks.Tom@epa.gov]; Watkins, Tim[Watkins.Tim@epa.gov]; Buckley, Timothy[Buckley.Timothy@epa.gov]; Sonich-Mullin, Cynthia[Sonich-Mullin.Cynthia@epa.gov]; Gilliland, Alice[Gilliland.Alice@epa.gov]; McDonald, James[McDonald.James@epa.gov]; Gettle, Jeaneanne[Gettle.Jeaneanne@epa.gov]; Carter, Bobbi[Carter.Bobbi@epa.gov]; Behl, Betsy[Behl.Betsy@epa.gov]; Strong, Jamie[Strong.Jamie@epa.gov]; Foster, Stiven[Foster.Stiven@epa.gov]; Deener, Kathleen[Deener.Kathleen@epa.gov]; Barbery, Andrea[Barbery.Andrea@epa.gov]; Yaquian-Luna, Jose[yaquian-luna.josea@epa.gov]; Taylor, Dawn[Taylor.Dawn@epa.gov]; Sassman, Hannah[sassman.hannah@epa.gov]; Braverman, Carole[braverman.carole@epa.gov]; O'shea, Marie[OShea.Marie@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Gwinn, Maureen[gwinn.maureen@epa.gov]; Flaherty, Colleen[Flaherty.Colleen@epa.gov]; Hauchman, Fred[hauchman.fred@epa.gov]; Mundrick, Doug[Mundrick.Doug@epa.gov]; France,

Danny[France.Danny@epa.gov]; Walker, Mary[walker.mary@epa.gov]; Zapata, Cesar[Zapata.Cesar@epa.gov]; Allenbach, Becky[Allenbach.Becky@epa.gov]; Heard, Anne[Heard.Anne@epa.gov]; Lapierre, Kenneth[Lapierre.Kenneth@epa.gov]; Hall, Renea[Hall.Renea@epa.gov]; Campbell-Dunbar, Shawneille[Campbell-Dunbar.Shawneille@epa.gov]; Mitchell, Ken[Mitchell.Ken@epa.gov]; Kemker, Carol[Kemker.Carol@epa.gov]; Azzam, Nidal[Azzam.Nidal@epa.gov]; Maddaloni, Mark[Maddaloni.Mark@epa.gov]; Cutt, Diana[Cutt.Diana@epa.gov]; Scheuer, Amy[Scheuer.Amy@epa.gov]; Robbins, Chris[Robbins.Chris@epa.gov]; Rodan, Bruce[rodan.bruce@epa.gov]; Yamada, Richard (Yujiro)[yamada.richard@epa.gov]; Walker, Stuart[Walker.Stuart@epa.gov]; Buster, Pamela[Buster.Pamela@epa.gov]; Gentry, Nathan[Gentry.Nathan@epa.gov]; Christian, Megan[Christian.Megan@epa.gov]; Fleming, Megan[Fleming.Megan@epa.gov]; Sivertsen, Scott[Sivertsen.Scott@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; vanDrunick, Suzanne[vanDrunick.Suzanne@epa.gov]; Williams, Joe[Williams.Joe@epa.gov]; Gillespie, Andrew[Gillespie.Andrew@epa.gov]; Holsinger, Hannah[Holsinger.Hannah@epa.gov]; Mclain, Jennifer[Mclain.Jennifer@epa.gov]; Guiseppi-Elie, Annette[Guiseppi-Elie.Annette@epa.gov]; Sams, Reeder[Sams.Reeder@epa.gov]
From: Matthews, Lisa
Sent: Fri 2/23/2018 9:58:54 PM
Subject: Materials for Feb 26 ECOS-EPA PFAS Call
February 26 2018 PFAS Call Agenda.pdf
ECOS-EPA_ITRC Feb 26 2018.pdf
PFAS_FIX_ECOS_20180226.pdf
Toxicity research_Sams.pdf

Attached please find materials for Monday's call including the agenda and presentations.

Have a great weekend!

Lisa

From: Matthews, Lisa
Sent: Wednesday, February 21, 2018 3:00 PM
Subject: Agenda for Feb 26 ECOS-EPA PFAS Call

Hello all,
Attached (and pasted below) please find the agenda for the ECOS-EPA PFAS Call on February 26 from 4:00-5:00 pm ET. This bimonthly call with ECOS/states and US EPA is to share information on PFAS human health/toxicity, analytical methods, site characterization/exposure and remediation/treatment work.

Please let me know if you have any questions, and we look forward to the discussion.

Please send any suggestions for future agenda topics to me (matthews.lisa@epa.gov) and Sarah Grace Longsworth (slongsworth@ecos.org).

Best regards,
Lisa

ECOS-EPA PFAS Call Agenda
Monday, February 26, 2018
4:00-5:00 pm Eastern

Dial in: Personal Phone / Ex. 6 **code** Personal Phone / Ex. 6
Webinar link: Personal Matters / Ex. 6
*Please dial *6 to mute your lines during the call.*
*To be heard, you must press *6 to unmute your line, and *6 again to remute it.*

4:00 Welcome
Jennifer Orme-Zavaleta, US EPA's Office of Research and Development (ORD)

4:05 EPA ORD's Human Health/Toxicity Research for PFAS
Reeder Sams, US EPA ORD's National Center for Computational Toxicology

4:25 Report Out: Federal Information Exchange on PFAS
Annette Guiseppi-Elie, US EPA ORD's National Exposure Research Laboratory

4:40 ITRC PFAS Team: Fact Sheets and Regulatory Guidance Document
Ginny Yingling, Minnesota Department of Health

Any time remaining will be open forum to share info (states)

5:00 Adjourn

Lisa Matthews
Senior Advisor and State Liaison
US EPA Office of Research and Development
202-564-6669 office
Personal Matters / Ex. 6 nobile